

IAP9 Rec'd PCT/PTO 07 DEC 2003

CLAIMS

1. Process for preparing an ethanolamine having an improved colour quality, characterised in that it comprises a contacting of an ethanolamine with an activated carbon free of one or more metals chosen from rhenium, ruthenium, rhodium, palladium, osmium, iridium, platinum and silver, under an atmosphere free of hydrogen.
- 5 2. Process according to claim 1, characterised in that the ethanolamine is an ethanolamine or a mixture of two or more ethanolamines chosen from monoethanolamine (MEA), diethanolamine (DEA) and preferably triethanolamine (TEA).
- 10 3. Process according to claim 1 or 2, characterised in that the ethanolamine is prepared in a synthesis stage by reacting ethylene oxide with ammonia, preferably in aqueous medium.
4. Process according to any one of claims 1 to 3, characterised in that the ethanolamine has initially, prior to its contacting with the activated carbon, a colour index (according to  
15 ASTM standard D 1209) of more than 40 Pt/Co, preferably more than 50 Pt/Co, and optionally a content by weight of metal, preferably of iron, equal to or more than 6 parts per million (ppm), more particularly equal to or more than 8 ppm, in particular equal to or more than 10 ppm.
- 20 5. Process according to any one of claims 1 to 4, characterised in that the activated carbon has a specific surface area ( $N_2$  BET) of from 500 to 5000  $m^2/g$ , preferably from 500 to 2500  $m^2/g$ , more particularly from 700 to 2000  $m^2/g$ .
- 25 6. Process according to any one of claims 1 to 5, characterised in that the contacting of the ethanolamine with the activated carbon is carried out at a temperature of from 10 to 200°C, preferably from 15 to 100 °C, more particularly from 20 to 80 °C.

7. Process according to any one of claims 1 to 6, characterised in that the contacting of the ethanolamine with the activated carbon is carried out for a period sufficient to reduce the colour of the ethanolamine, preferably for a period such that the colour index (according to ASTM standard D 1209) of the ethanolamine becomes equal to or less than 50 Pt/Co, preferably equal to or less than 40 Pt/Co, more particularly equal to or less than 30 Pt/Co.

8. Process according to any one of claims 1 to 7, characterised in that the mean residence time of the ethanolamine contacted with the activated carbon is chosen in a range of from 10 minutes to 18 hours, preferably from 30 minutes to 12 hours, more particularly from 1 to 8 hours.

9. Process according to any one of claims 1 to 8, characterised in that it is carried out during or after the stage of preparation of the ethanolamine, preferably during or after the stage of purification of the ethylene.

10. Process for manufacturing a triethanolamine (TEA) having an improved colour quality, which process comprises the following stages:

- (i) a stage for synthesising TEA by the contacting of ethylene oxide with ammonia in aqueous medium, so as to form a crude TEA containing monoethanolamine (MEA), diethanolamine (DEA) and TEA, as a mixture with water and ammonia in excess and/or not having reacted,
- (ii) a stage for separating the crude TEA and the mixture of water and ammonia, so as to isolate and recover the crude TEA, and
- (iii) a stage for purifying the TEA by distillation of the crude TEA, so as to separate substantially the MEA and the DEA from the TEA, and to isolate and recover a purified TEA containing at least 85 wt % of TEA,

which process is characterised in that, after the separation stage (ii) or during or after the purification stage (iii), the crude or purified TEA is contacted with an activated carbon free of one or more metals chosen from rhenium, ruthenium, rhodium, palladium, osmium, iridium, platinum and silver, under an atmosphere free of hydrogen.